



3G Cell Modem Upgrade

For BaseStation 1000
Irrigation Controllers
in Pedestal Enclosures

October 7, 2014

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FCC Compliance Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Introduction

This document describes the steps required to upgrade your 2G cell modem to a 3G cell modem and re-establish your connection to BaseManager.

To upgrade your 2G cell modem to a 3G cell modem, you need to perform the following tasks:

Step 1 – Check the firmware version on your controller and install an update if necessary.

Step 2 – Uninstall the 2G cell modem hardware in your BaseStation 1000 pedestal.

IMPORTANT! Do not uninstall the 2G cell modem until you record the SIM number.

Step 3 – Install the 3G cell modem hardware in your BaseStation 1000 pedestal.

Step 4 – Activate your SIM card with Baseline.

Step 5 – Verify the cell modem connection in the controller.

If your controller or cell modem is in a C cabinet, contact Baseline Support at 866-294-5847 for upgrade options.

Step 1 – Check Your Firmware Version & Update if Necessary

BaseStation 1000 controllers running firmware version 1.11 and higher have integrated support for 3G cell modem communication. If your controller is running an earlier firmware version, you will need to download a firmware update onto a USB drive from the Baseline web site.

To check the version of firmware on your BaseStation 1000 controller

1. On the BaseStation 1000, press the **System Setup** button. The System Setup menu displays.
2. Press the **↓** button to highlight the **Firmware Update** option, and then press the **OK** button to select it. The Firmware Update menu displays.
3. The **USB Update** option should be highlighted. If it is not highlighted, press the **↓** button to highlight it, and then press the **OK** button to select it.



The USB Update screen displays the current firmware version at the top. If your controller is running a firmware version earlier than 1.11, you will need to download a firmware update onto a USB drive from the Baseline web site, and then install it on your controller.

To update the BaseStation 1000 firmware from the Baseline web site

You will need a computer with a USB port. This computer must have access to the Internet. You also need a USB (thumb) drive. You download the firmware from the Baseline web site to the USB drive. Then, you take the USB drive to the controller and install the update.

1. Go to the Baseline web site at the following URL:

www.baselinesystems.com

2. On the home page, click **Support**.
3. In the left navigation bar, click **Firmware Version Updates**.
4. Click the **BaseStation 1000** tab.
5. Follow the instructions on the web page to download the update. You can also click the **Printable Instructions** link on the web page to display the instructions in a format that is suitable for printing.

To update the BaseStation 1000 firmware from BaseManager

You can use this method when your controller **is connected** to the Internet. This method installs the firmware update directly from BaseManager to your controller.

We recommend that you back up your current configuration before starting this process in case you need to restore your system. Refer to Backing Up the Controller Programming in your controller's user manual.

Note: You can update the controller remotely by performing the following steps in LiveView.

1. Press the **System Setup** button. The System Setup menu displays.
2. Press the **↓** button to highlight the **Network Setup** option, and then press the **OK** button to select it. The Network Setup menu displays.
3. Press the **↓** button to highlight the **BaseManager Info** option, and then press the **OK** button to select it. The BaseManager Info screen displays. Verify that your controller is connected to BaseManager.
4. Press the **Back** button to return to the System Setup menu.
5. Press the **↓** button to highlight the **Firmware Update** option, and then press the **OK** button to select it. The Firmware Update menu displays.
6. Press the **↓** button to highlight the **BaseManager Update** option, and then press the **OK** button to select it. The BaseManager Update screen displays.
7. Verify that the firmware update is available.
8. Press the **+** button to apply the update. When the update is complete, the controller restarts and briefly displays the new firmware version.

Note: If the firmware did not update as expected, please call Baseline Support at 866.294.5847.

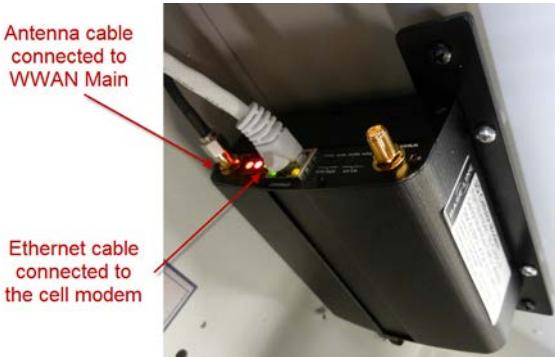
Step 2 – Uninstall the 2G Cell Modem

WAIT! Have you recorded the SIM number and serial number from your 2G cell modem? If not, you need to find these numbers before you uninstall the 2G cell modem. Refer to the instructions at the end of this document.

1. We recommend that you back up your current configuration before starting this process in case you need to restore your system. Refer to Backing Up the Controller Programming in the BaseStation 1000 User Manual.
2. Halt all watering while you uninstall the 2G cell modem hardware. Turn the dial on the controller to the **OFF** position.
3. Open and remove the front door on the lower part of the pedestal.
4. Find the orange power connector on the wires coming from the transformer. Gently pull the connector away from the board to disconnect the power.
5. Find where the antenna cable connects to the 2G cell modem, and then disconnect the antenna cable from the cell modem. Leave the antenna and antenna cable in place.
6. Remove the 5-pin connector from the control board.
7. Remove the screws that are holding the cell modem to the pedestal.
8. Remove the cell modem from the pedestal.
9. Dispose of the 2G cell modem according to your state regulations.

Step 3 – Install the 3G Cell Modem

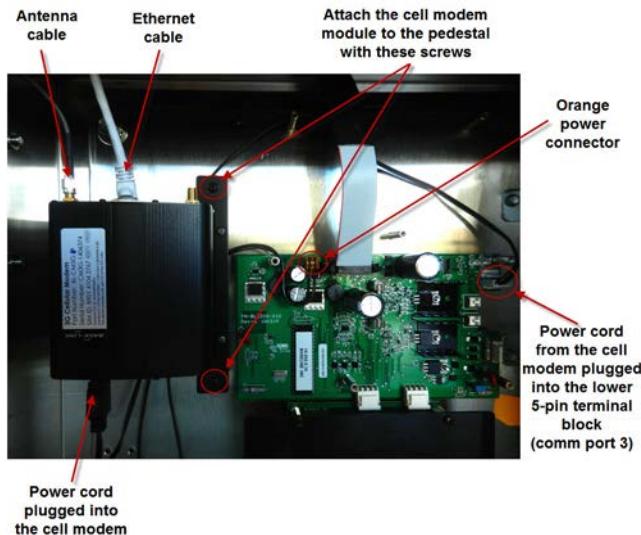
1. If it is not already plugged in, plug the power cord into the 3G cell modem module.
2. Plug the Ethernet cable into the Ethernet jack on the 3G cell modem module.
3. Attach the antenna cable to the connector on the 3G cell modem module labeled WWAN Main.



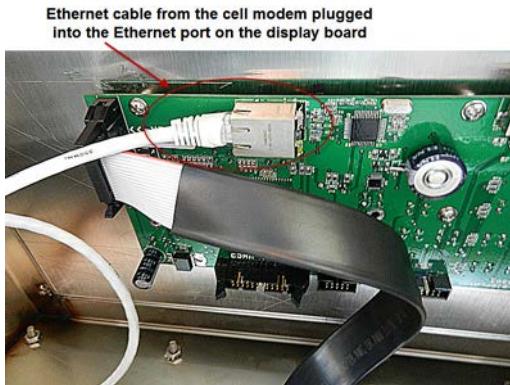
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4. With the antenna and Ethernet cables pointing up and the power cord pointing down, align the two mounting holes on the right side of the 3G cell modem module with the standoffs on the back wall of the pedestal. Use the screws provided to secure the board to the enclosure.
5. Plug the 5-pin connector from the 3G cell modem power cord into one of the 5-pin connectors on right end of the controller board.

Note: The illustration shows the black plastic dust cover removed from the controller board; however, you can install the 3G cell modem without removing the dust cover.



6. Plug the other end of the Ethernet cable into the Ethernet jack on the back of the display board.



7. Reconnect the orange power connector to the board in order to restore power to the controller.
8. Replace the pedestal door, and then restart the controller by pressing the **RUN** button.

Step 4 – Activate Your SIM Card with Baseline

Using the information on your 3G Cell Modem Upgrade Information card that came with your upgrade kit, fill out your information on the electronic **3G Cell Service Upgrade Form**. This form is available online at the following URL:

www.baselinesystems.com/3g-upgrade-form

IMPORTANT! Baseline **will not activate** your SIM card **until we have received your 3G Cell Service Upgrade Form with your valid billing information**. Be sure to read the Wireless Service Terms and Conditions that is linked to the 3G Cell Service Upgrade Form.

Please allow 2 business days after Baseline receives your 3G Cell Service Upgrade Form for your SIM card to be activated.

Step 5 – Verify the Cell Modem Connection in the Controller

After Baseline informs you that your SIM card has been activated, go to your BaseStation controller and verify that the cell modem is connected to the cellular network.

1. On the BaseStation 1000 controller, press the **System Setup** button. The System Setup menu displays.
2. Press the **↓** button to highlight the **Network Setup** option, and then press the **OK** button to select it. The Network Setup menu displays.

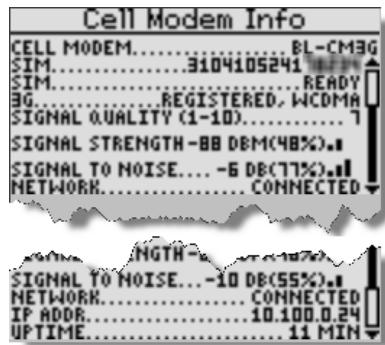
After the cell modem hardware has been installed and is powered up, the **Cell Modem Info** option displays on the Network Setup menu.

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3. Press the **↓** button to highlight the **Cell Modem Info** option, and then press the **OK** button to select it. The Cell Modem Info screen displays the following information:

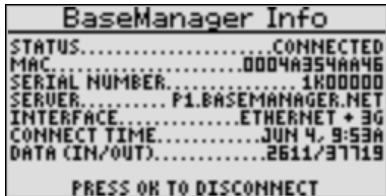
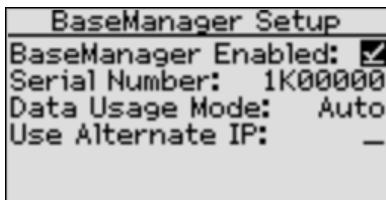
- **Cell Modem:** Identifies the Baseline part number for the 3G cell modem.
- **SIM:** The first SIM field displays the unique serial number of the subscriber identity module (SIM) card that is installed in your cell modem. Baseline must activate your SIM card in order for your cell modem to connect. Prior to activation, the second SIM field displays Service Not Authorized.

The second SIM field and the following line display the registration status of the SIM card.



- **Signal Quality:** This field displays a number from 1 – 10 that indicates the overall quality of the signal. The higher the number, the better the signal quality.
- **Signal Strength:** When your modem is connected, this field shows the strength of the connection in dBm and a signal strength meter represented by a series of bars. More bars mean a stronger signal.
 - Excellent = -70 or better
 - Good = -85 or better
 - Fair = -100 or better
 - Poor = worse than -100
- **Signal to Noise:** This field shows the level of the signal when compared to the level of the background noise. The field also shows a signal to noise meter represented by a series of bars. More bars mean a better signal to noise ratio.
 - Excellent = better than -5
 - Good = better than -9
 - Fair = better than -12
 - Poor = better than -15
 - Very Poor = worse than -15
- **Network:** This field shows the status of the network connection.
- **IP ADDR:** This field shows the IP address assigned to the cell modem.
- **Uptime:** This field shows the number of minutes that the modem has been connected.

4. Press the **Back** button to return to the Network Setup menu and then press the **↑** or **↓** button to move to the **BaseManager Setup** option, and then press the **OK** button to select it. The BaseManager Setup screen displays.
5. Verify that there is a checkmark in the **BaseManager Enabled** field.
6. Press the **Back** button to return to the Network Setup menu and then press the **↑** or **↓** button to move to the **BaseManager Info** option, and then press the **OK** button to select it. The BaseManager Info screen displays.
7. Verify that **Connected** displays in the **Status** field and that **Ethernet + 3G** displays in the **Interface** field.
8. The origination date of your connection displays in the **Connect Time** field.
9. The number of bytes received from and sent to BaseManager displays in the **Data (In/Out)** field.
10. Press the **Run** button.



Finding the SIM Number for the 2G Cell Modem

Before you uninstall your 2G cell modem, make sure to record the SIM number on the 3G Cell Modem Upgrade Information card that came with your upgrade kit.

You can find the SIM number by performing the following procedure on the BaseStation 1000 irrigation controller.

1. On the BaseStation 1000 irrigation controller, press the **System Setup** button. The System Setup menu displays.
2. Press the **↓** button to highlight the **Network Setup** option, and then press the **OK** button to select it. The Network Setup menu displays.
3. After the cell modem hardware has been installed and is powered up, the **Cell Modem Info** option displays on the Network Setup menu.
4. Press the **↓** button to highlight the **Cell Modem Info** option, and then press the **OK** button to select it.
5. Carefully write down the number found in the **SIM #** field.
6. Carefully write down the serial number found on the 2G cell modem label inside the BaseStation 1000 enclosure.